PATENT COOPERATION TREATY

From the INTERNATIONAL BUREAU

PCT

NOTIFICATION OF ELECTION

(PCT Rule 61.2)

To:

Commissioner
US Department of Commerce
United States Patent and Trademark Office, PCT
2011 South Clark Place Room CP2/5C24
Arlington, VA 22202
ETATS-UNIS D'AMERIQUE

in its capacity as elected Office

Date of mailing (day/month/year) 29 May 2001 (29.05.01)	
International application No. PCT/AU00/01219	**Applicant's or agent's file reference** 2001085
International filing date (day/month/year) 05 October 2000 (05.10.00)	**Priority date** (day/month/year) 05 October 1999 (05.10.99)
Applicant LUCK, Robin, William	

1. The designated Office is hereby notified of its election made:

[X] in the demand filed with the International Preliminary Examining Authority on:

04 May 2001 (04.05.01)

[] in a notice effecting later election filed with the International Bureau on:

2. The election [X] was

[] was not

made before the expiration of 19 months from the priority date or, where Rule 32 applies, within the time limit under Rule 32.2(b).

The International Bureau of WIPO
34, chemin des Colombettes
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Authorized officer

J. Leitao

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PATENT COOPERATION TREATY

PCT

INTERNATIONAL PRELIMINARY EXAMINATION REPORT

(PCT Article 36 and Rule 70)

RECD 13 SEP 2001
WIPO PCT

Applicant's or agent's file reference 200 1 085	**FOR FURTHER ACTION**	See Notification of Transmittal of International Preliminary Examination Report (Form PCT/IPEA/416).
International application No. **PCT/AU 00/01219**	International filing date *(day/month/year)* 05 October 2000	Priority Date *(day/month/year)* 05 October 1999

International Patent Classification (IPC) or national classification and IPC

Int. Cl.[7] B05C 17/005 B25H 3/02 B25F 5/02 F16M 3/00

Applicant

1. MI-OK PTY LTD et al

1. This international preliminary examination report has been prepared by this International Preliminary Examining Authority and is transmitted to the applicant according to Article 36.

2. This REPORT consists of a total of **3** sheets, including this cover sheet.

☐ This report is also accompanied by ANNEXES, i.e., sheets of the description, claims and/or drawings which have been amended and are the basis for this report and/or sheets containing rectifications made before this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions under the PCT).

These annexes consist of a total of sheet(s).

3. This report contains indications relating to the following items:

I	☒	Basis of the report
II	☐	Priority
III	☐	Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
IV	☐	Lack of unity of invention
V	☒	Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
VI	☐	Certain documents cited
VII	☐	Certain defects in the international application
VIII	☐	Certain observations on the international application

Date of submission of the demand 04 May 2001	Date of completion of the report 28 August 2001
Name and mailing address of the IPEA/AU AUSTRALIAN PATENT OFFICE PO BOX 200 WODEN ACT 2606 AUSTRALIA E-mail address: pct@ipaustralia.gov.au Facsimile No. (02) 6285 3929	Authorized Officer SARAVANAMUTHU PONNAMPALAM Telephone No. (02) 6283 2070

INTERNATIONAL PRELIMINARY EXAMINATION REPORT

International application No.
PCT/AU 00/01219

I. Basis of the report

1. With regard to the **elements** of the international application:*

[X] the international application as originally filed.

[] the description, pages , as originally filed,
pages , filed with the demand,
pages , received on with the letter of .

[] the claims, pages , as originally filed,
pages , as amended (together with any statement) under Article 19,
pages , filed with the demand,
pages , received on with the letter of .

[] the drawings, pages , as originally filed,
pages , filed with the demand,
pages , received on with the letter of .

[] the sequence listing part of the description:
pages , as originally filed
pages , filed with the demand
pages , received on with the letter of .

2. With regard to the **language**, all the elements marked above were available or furnished to this Authority in the language in which the international application was filed, unless otherwise indicated under this item.
These elements were available or furnished to this Authority in the following language which is:

[] the language of a translation furnished for the purposes of international search (under Rule 23.1(b)).

[] the language of publication of the international application (under Rule 48.3(b)).

[] the language of the translation furnished for the purposes of international preliminary examination (under Rules 55.2 and/or 55.3).

3. With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application, the international preliminary examination was carried out on the basis of the sequence listing:

[] contained in the international application in written form.

[] filed together with the international application in computer readable form.

[] furnished subsequently to this Authority in written form.

[] furnished subsequently to this Authority in computer readable form.

[] The statement that the subsequently furnished written sequence listing does not go beyond the disclosure in the international application as filed has been furnished.

[] The statement that the information recorded in computer readable form is identical to the written sequence listing has been furnished

4. [] The amendments have resulted in the cancellation of:

[] the description, pages

[] the claims, Nos.

[] the drawings, sheets/fig

5. [] This report has been established as if (some of) the amendments had not been made, since they have been considered to go beyond the disclosure as filed, as indicated in the Supplemental Box (Rule 70.2(c)).**

* *Replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report since they do not contain amendments (Rules 70.16 and 70.17).*

** *Any replacement sheet containing such amendments must be referred to under item 1 and annexed to this report*

V. Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1. Statement

Novelty (N)	Claims **1-19**	**YES**
	Claims	**NO**
Inventive step (IS)	Claims	**YES**
	Claims **1-19**	**NO**
Industrial applicability (IA)	Claims **1-19**	**YES**
	Claims	**NO**

2. Citations and explanations (Rule 70.7)

NOVELTY (N) and INVENTIVE STEP (IS)

Claims 1-19 meets the criteria set out in PCT Article 33(2), because no single prior art document discloses the features of each of the claims 1 to 19 ie. a portable tool box containing an electrically operated air compressor.

Claims 1 and 15 lack inventive step under PCT Article 33(3).

The invention defined in claim 1 and 15 does not involve an inventive step in the light of GB 2330521 A.

The claimed invention differs from the cited art in use of electrically operated air compressor where as citation discloses an electrically operated vacuum cleaner.

However this difference resides only in an arrangement which is a mere technical equivalent. Both are well known in the art and it would clearly have been obvious to the person skilled in the art (PSA) that one could be replaced by the other without materially affecting the way the invention worked. Therefore the PSA would directly and without difficulty, by routine steps, have produced the claimed arrangement, and therefore the claimed invention lacks an inventive step.

Furthermore, I consider that the features added by the appended claims do not contribute to patentable invention.

(12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

CORRECTED VERSION

(19) World Intellectual Property Organization
International Bureau

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PCT

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(51) International Patent Classification[7]: B05C 17/005, B25H 3/02, B25F 5/02, F16M 3/00

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(22) International Filing Date: 5 October 2000 (05.10.2000)

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(72) Inventor; and

(75) Inventor/Applicant *(for US only)*: **LUCK, Robin, William** [AU/AU]; 59 Waterhouse Avenue, St Ives, New South Wales 2075 (AU).

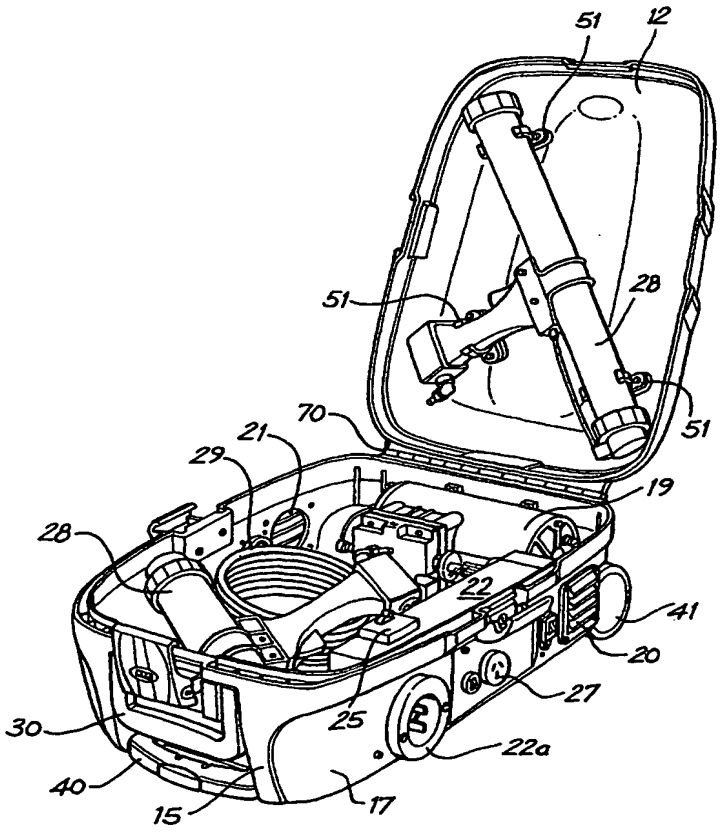
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(81) Designated States *(national)*: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CR, CU, CZ, DE, DK, DM, DZ, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZW.

[Continued on next page]

(54) Title: PORTABLE TOOL BOX

(57) Abstract: A portable tool box (10) for an air-powered tool (28) includes a container (11) having a lid (12) and an air vent (20). Within the container (11) there is an electrically operated air compressor (19), a pneumatic hose (29) and the tool (28).



WO 01/24941 A1

(84) **Designated States** *(regional)*: ARIPO patent (GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG).

Published:
— *with international search report*

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4 October 2001

(15) **Information about Correcti n:**
see PCT Gazette No. 40/2001 of 4 October 2001, Section II

For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

PORTABLE TOOL BOX

TECHNICAL FIELD

This invention relates to portable tool boxes and more particularly to a portable tool box for a compressed air tool dispensing gun such as an adhesive gun, nail gun, mixer gun, sausage gun, ratio-pack gun and the like.

For the sake of convenience, the invention will be described in relation to a portable air-powered adhesive gun but it is to be understood that the invention extends to both other forms of dispensing gun as well as other air powered tools.

BACKGROUND ART

Adhesive guns may be either air-powered or manually actuated. Air-powered adhesive guns generally require an air compressor and an air reservoir for operation and hitherto those compressors have been very heavy, very bulky and generally difficult to move about a work site. It is these disadvantages of air-powered adhesive guns that leads to the use of manually actuated adhesive dispensing guns on building sites in circumstances where an air-powered adhesive gun would lead to greater productivity and less worker fatigue and worker injuries.

It is, therefore, an object of this invention to provide a portable air-powered tool which overcomes some, if not all, of the disadvantages associated with currently available air compressor arrangements.

SUMMARY DISCLOSURE OF INVENTION

According to one aspect of the invention there is provided a portable tool box comprising a container having a lid, within which container is mounted an electrically operated air compressor. The container has walls, and a vent mounted in one of the walls.

In one preferred embodiment of the invention, the compressor is electrically connected to a connection box which is electrically accessible from an exterior of the container.

In further embodiments of the invention, the container further comprises one or more general purpose electrical outlets which are electrically connected to the connection box.

In preferred embodiments, the tool box further contains a pneumatic hose and a tool which connects to the compressor with the hose.

In some embodiments, the container has formed therein an opening through which a hose may pass while the hose is connected to the compressor.

In particularly preferred embodiments, the compressor is adapted to operate a dispensing gun without the need for an air reservoir or accumulator.

In some embodiments, the compressor is a medical grade - free compressor.

The invention also provides a method of dispensing comprising the steps of:-

(i) operating a continuously operating air compressor within a portable tool box, and

(ii) dispensing a substance from a gun, the gun powered by air delivered by the compressor through a hose which extends between the compressor and the gun when the portable tool box is closed.

In preferred methods of the invention, the continuously operating air compressor does not require an air reservoir or accumulator.

According to other aspects of the invention there is provided a portable air-powered tool comprising a container having an opening and closed by a lid,

an electrically driven air compressor mounted within the container, at least one air vent in the walls of the container to permit air flow from the exterior to the interior of the container, electrical circuitry means within the container electrically connected to the air compressor and adapted to be connected to a power supply, said container being adapted to house an air-powered gun and an air line for connecting the gun to the air compressor.

In one form of the invention, the electrical circuitry is connected to a general purpose power outlet adapted to receive an electrical lead for electrical devices such as lights, vacuum cleaners and power tools. The electrical circuitry may include a switch which enables the compressor to be switched off with the other device remaining on.

The electrical circuitry may be connected to a battery pack within or external of the container or may be adapted for connection to a main supply.

In a preferred form of the invention there is provided locking means for locking the lid to the container. The container may be provided with wheels, multiple handles and/or a pull-out handle.

BRIEF DESCRIPTION OF THE DRAWINGS

In order that the invention may be more readily understood and put into practical effect, reference will now be made to the accompanying drawings in which:-

Fig. 1 is a perspective view of a potable tool box according to the teachings of the present invention;

Fig. 2 is a side elevation of the device depicted in Fig. 1;

Fig. 3 is another side elevation of the device depicted in Fig. 1;

Fig. 4 is an end elevation of the device depicted in Figs. 1 to 3;

Fig. 5 is another end view of the device depicted in Figs. 1 to 4;

Fig. 6 is an isometric perspective of the device of the present

inv ntion with the lid open;

Fig. 7 is a front view of the device being carried;

Fig. 8 is a side view of the device being pulled on its wheels, and

Fig. 9 depicts in perspective view a person utilising the device of the present invention with the case closed.

BEST MODE FOR CARRYING OUT THE INVENTION

The tool box 10 shown in the drawings includes a container 11 having a lid 12 and locking means 13. The container 11 has a base 14 with optional skids 14a, end walls 15 and 16 and side wall 17 and 18. An electrically operated air compressor 19 is mounted within the container 11 on or near the base 14. Air vents 20 and 21 are provided in the end walls 15 and 16. The container is preferably formed from high impact polymer in a clamshell design with a hinge 70 along a bottom edge.

An electrical circuit within the container 11 includes a connection box 22 adapted to be connected from a fixture 22a to a main supply by an extension lead. A line leads from the box 22 to the electrical terminals of the compressor 19 through an on/off switch 25. Line 26 connects one or more general purpose outlets 27 to the connection box 22. The purpose of the switch 25 is to enable power to be supplied to the general purpose outlets 27 when the compressor 19 is turned off. For example, a light could be connected to one of the general purpose outlets 27 and it can be therefore used without having to run the compressor at the same time. The circuitry may also incorporate a miniature circuit breaker and a residual current device.

An adhesive gun 28 is positioned within the container 11 for example with clips 51 along with an air hose line 29 which is used to couple the gun 28 to the compressor 19.

Preferably, the compressor 19 is a light weight compressor having a long term continuous operating capacity which enables the use of a much smaller and lighter compressor than currently used compressors which may have a substantial accumulator vessel that is charged by the intermittent running of the compressor. Preferably, the compressor is a medical grade oil-free compressor. The compressor may be moderated by a blow-off valve with silencer which maintains an optimum pressure level and prevents pressure back-up during re-starts and motor overload. It is anticipated that the complete portable operated tool of the invention would weigh in the vicinity of 5kg as opposed to 25 to 30kg or much more for current equipment.

In this instance, the container 11 has a handle 30 but various combination of handles could be provided on the lid 12, the side walls and the end walls 15 and 16 of the container 11. A pull-out handle 40 could also be used in which case the container 11 would be fitted with wheels 41 as shown in Fig. 8.

As shown in Figs. 8 and 9 an opening 50 is provided in a wall to allow the hose 19 to exit the container when the hose is connected to the compressor 19.

Various other modifications may be made in details of design and construction without departing from the scope and ambit of the invention. For example, the compressor 19 could be coupled to one or more air vents by a housing to ensure that items placed in the container 11 do not block the flow of air to the compressor 19. Releasable fastener means may be provided to secure the adhesive gun 28 and the hose line 29.

CLAIMS

1. A portable tool box comprising:-
a container having a lid, within which container is mounted an electrically operated air compressor;
the container having walls, a vent mounted in one of the walls.

2. The tool box of claim 1, wherein:
the compressor is electrically connected to a connection box which is electrically accessible from an exterior of the container.

3. The tool box of either of claims 1 or 2, wherein:
the container further comprises one or more general purpose electrical outlets which are electrically connected to the connection box.

4. The tool box of any one of claims 1 to 3, wherein:
the container further comprises one or more internally mounted clips for retaining tools which may be provided by the compressor.

5. The tool box of any one of claims 1 to 4, wherein:
the tool box further contains a pneumatic hose and a tool which connects to the compressor with the hose.

6. The tool box of any one of claims 1 to 5, wherein:
the container has formed therein an opening through which a hose may pass while the hose is connected to the compressor.

7. The tool box of any one of claims 1 to 6, wherein:
the container further comprises an extensible handle and wheels for facilitating transport of the container.

8. The tool box of any one of claims 1 to 7, wherein:
the compressor is adapted to operate a dispending gun without the need for an air reservoir or accumulator.

9. The tool box of any one of claims 1 to 8, wherein:
the compressor is a medical grade oil-free compressor.

10. The tool box of any one of claims 1 to 9, wherein:
the container is moulded from a high impact polymer in a clamshell design.

11. The tool box of any one of claims 1 to 10, wherein:
the compressor further comprises a pressure relief valve.

12. The tool box of any one of claims 1 to 11, wherein:
an electrical circuit to which the connection box is electrically connected further comprises a residual current device.

13. The tool box of any one of claims 1 to 12, wherein:
an electrical circuit to which the connection box is electrically connected further comprises a miniature circuit breaker.

14. The portable tool box of any one of claims 1 to 13, wherein:

the container further comprises a lock for the lid.

15. A method of dispensing a substance from a gun comprising the steps of:
operating a continuously operating air compressor within a portable tool box;
dispensing the substance from the gun, the gun powered by air delivered by the compressor through a hose which extends between the compressor and the gun when the portable tool box is closed.

16. The method of claim 15, wherein:
the continuously operating air compressor does not require an air reservoir or accumulator.

17. The method of any one of claims 15 or 16, wherein:
the compressor is a medical grade oil-free compressor.

18. The method of any one of claims 15 to 17, wherein:
the operation of the air compressor is moderated by a blow-off valve and silencer which maintain the compressor at an optimum pressure level and, during re-starts prevent pressure back-up and motor overload.

19. The portable tool box of any one of claims 1 to 14, wherein:
the container further comprises one or more skids mounted on an exterior of a wall.

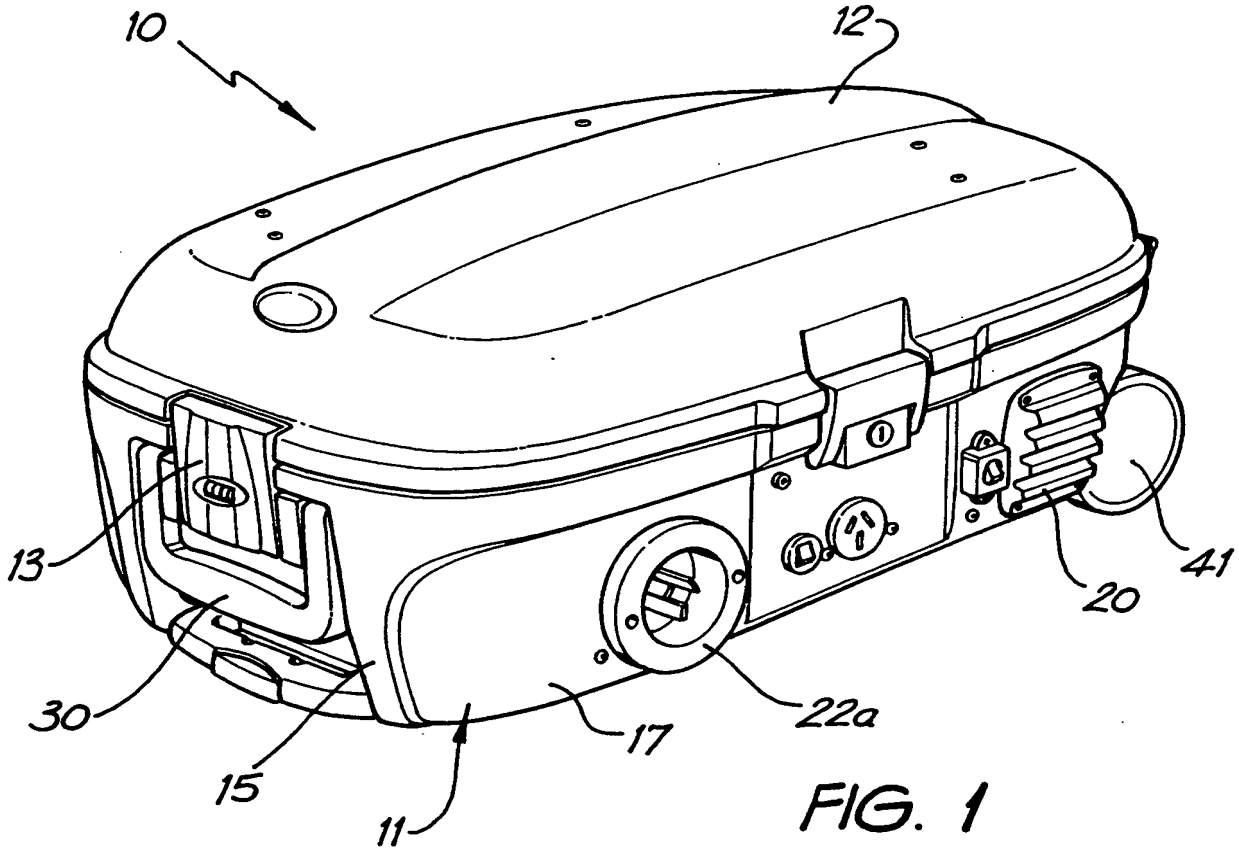


FIG. 1

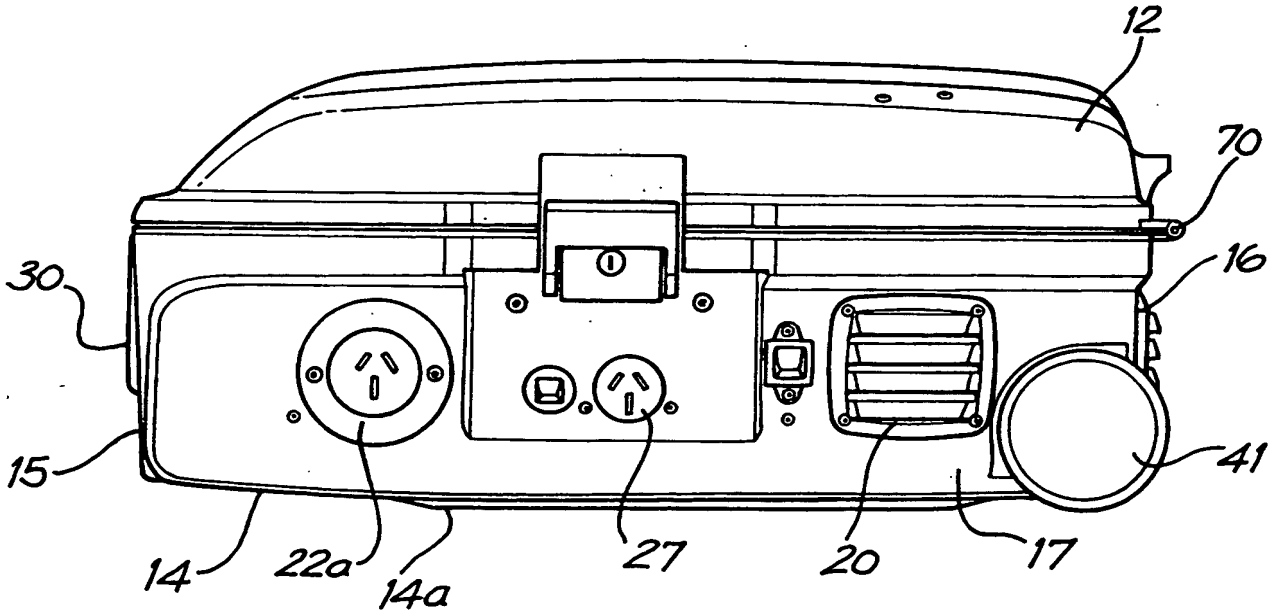


FIG. 2

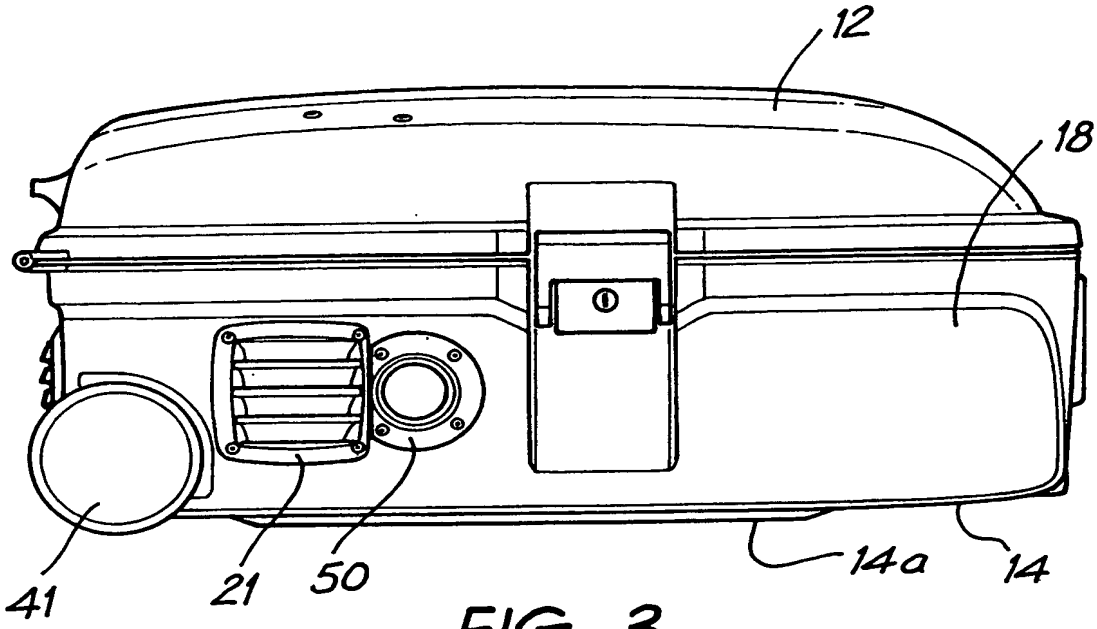


FIG. 3

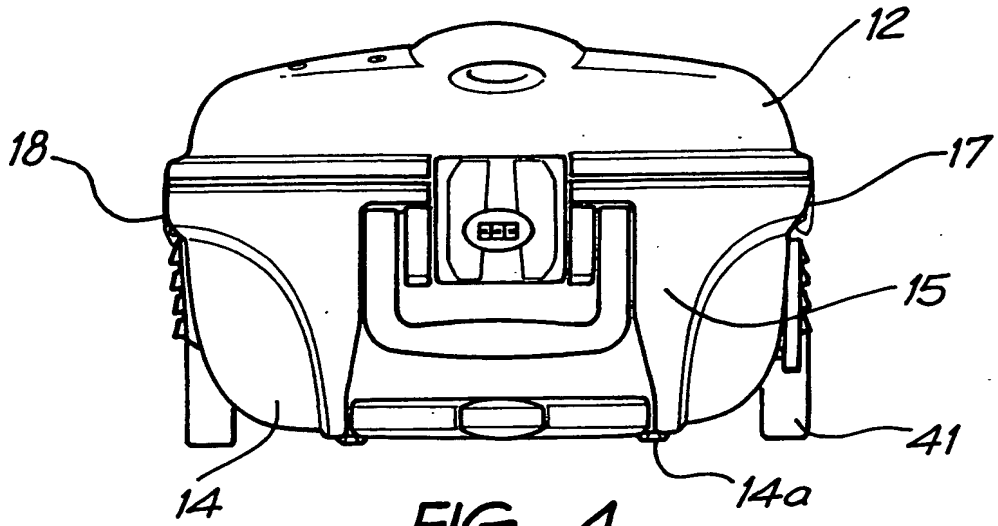


FIG. 4

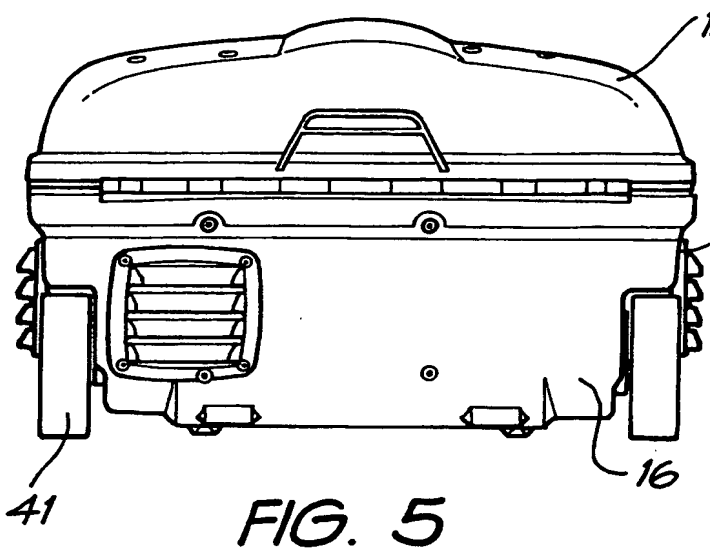


FIG. 5

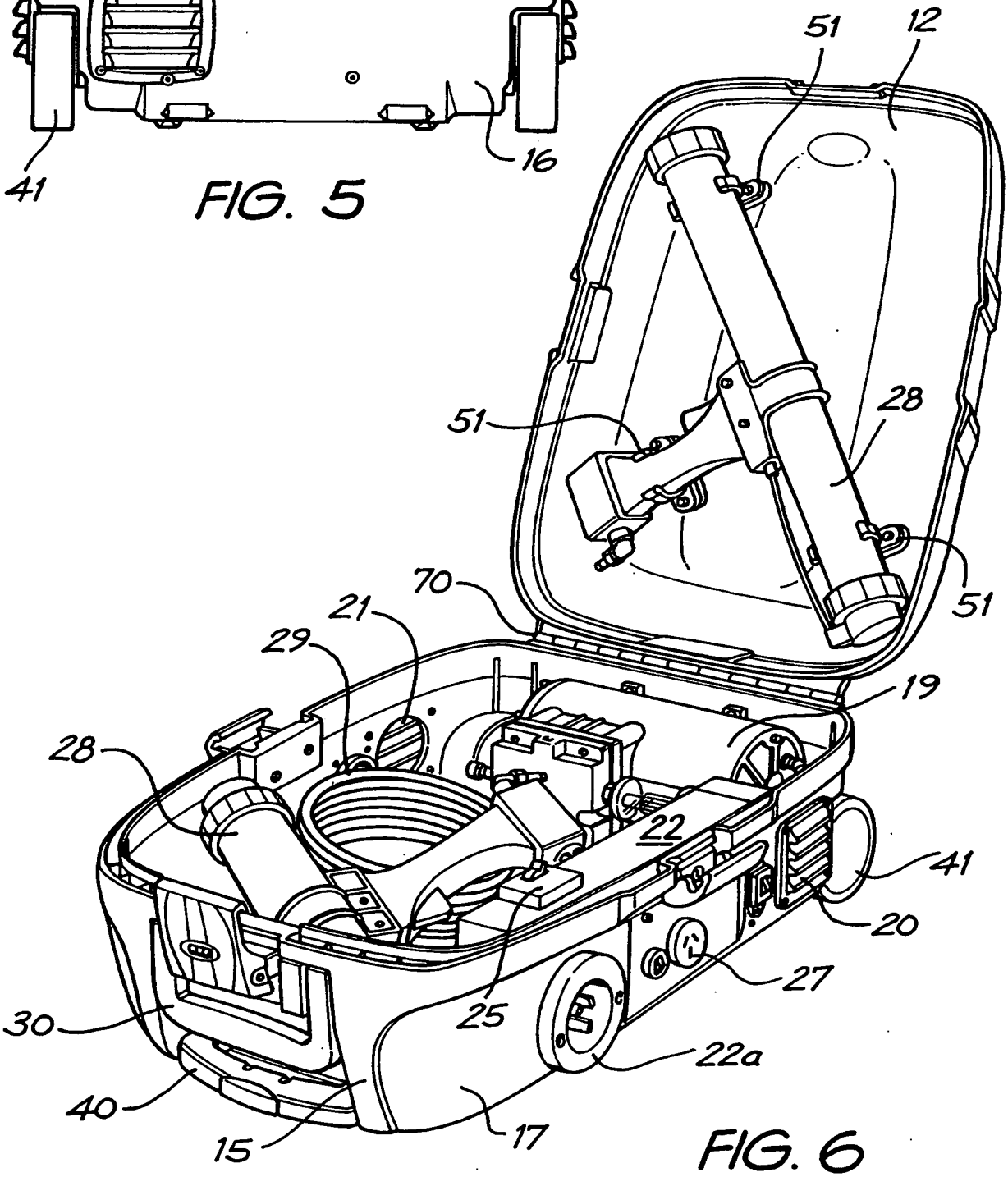


FIG. 6

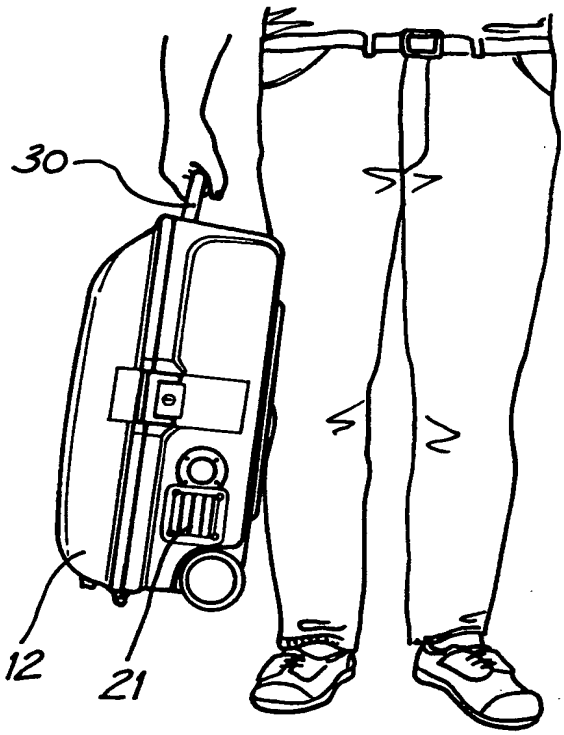


FIG. 7

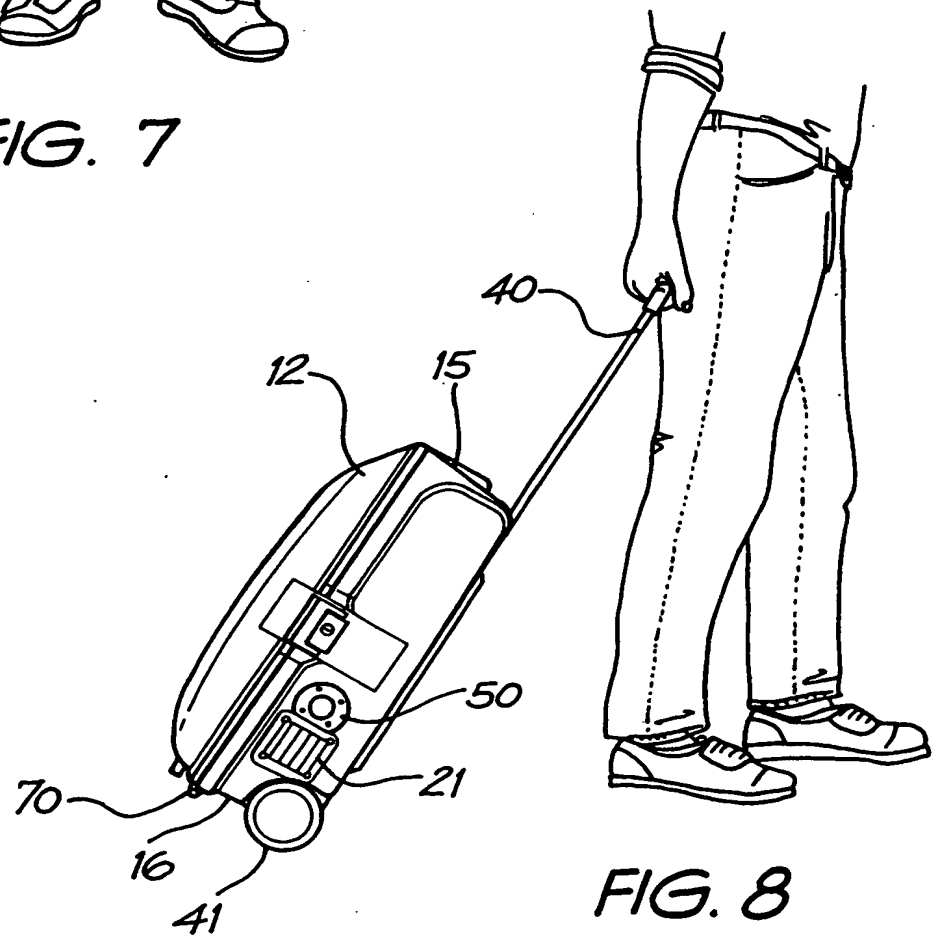


FIG. 8

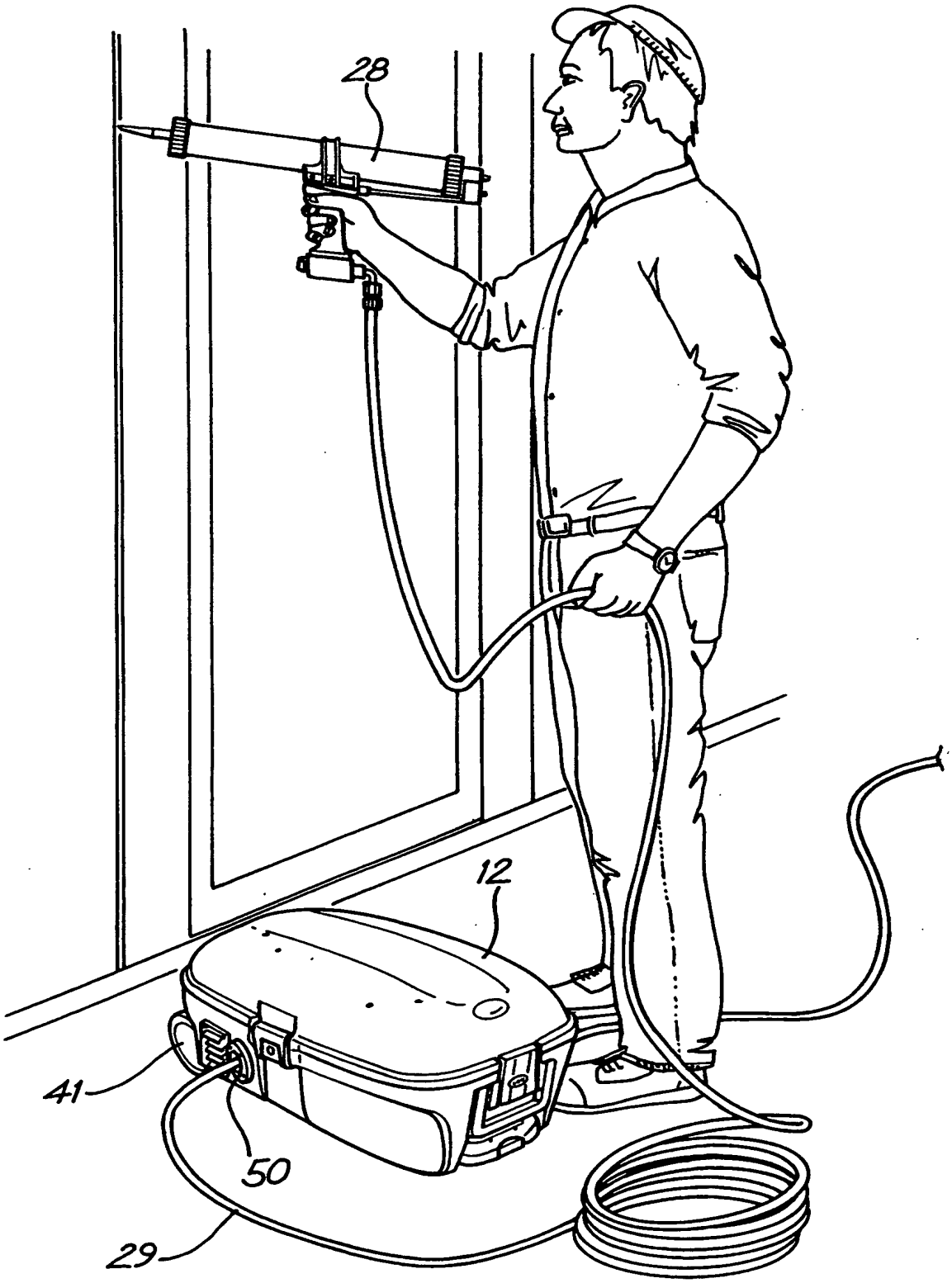


FIG. 9

INTERNATIONAL SEARCH REPORT

International application No.
PCT/AU 00/01219

A. CLASSIFICATION OF SUBJECT MATTER

Int Cl[7]: B05C 17/005 B25H 3/02 B25F 5/02 F16M 3/00

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)
IPC: B05C 17/005 B25H 3/02 B25F 5/02 F16M 3/00

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched
AU: IPC as above

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	GB 2330521 A (SPOONER) 28 April 1999 Whole document	1-19
A	WO 99/10134 A (MÜLLER) 4 March 1999 Whole document	1-19
A	Patent abstract of Japan, JP 10236557 A (YOSHINO) 8 September 1998 Abstract	1-19

[X] Further documents are listed in the continuation of Box C

[X] See patent family annex

* Special categories of cited documents:

"A" Document defining the general state of the art which is not considered to be of particular relevance

"E" earlier application or patent but published on or after the international filing date

"L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)

"O" document referring to an oral disclosure, use, exhibition or other means

"P" document published prior to the international filing date but later than the priority date claimed

"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention

"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone

"Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art

"&" document member of the same patent family

Date of the actual completion of the international search	Date of mailing of the international search report
25 October 2000	-6 NOV 2000
Name and mailing address of the ISA/AU AUSTRALIAN PATENT OFFICE PO BOX 200 WODEN ACT 2606 AUSTRALIA E-mail address: pct@ipaustralia.gov.au Facsimile No.: (02) 6285 3929	**Authorized officer** SARAVANAMUTHU PONNAMPALAM Telephone No.: (02) 6283 2070

INTERNATIONAL SEARCH REPORT

International application No.
PCT/AU 00/01219

C (Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	Patent Abstracts of Japan JP 10337680 A (GONKEN) 22 December 1998 Abstract	1-19
A	GB 669893 A (THE BRITISH THOMSON-HOUSTON COMPANY LIMITED) 9 April 1952 Whole document	1-19

INTERNATIONAL SEARCH REPORT
Information on patent family members

Internati nal applicati n No.
PCT/AU 00/01219

This Annex lists the known "A" publication level patent family members relating to the patent documents cited in the above-mentioned international search report. The Australian Patent Office is in no way liable for these particulars which are merely given for the purpose of information.

Patent Document Cited in Search Report		Patent Family Member					
GB	2330521	NONE					
WO	9910134	AU	9340698	BG	104224	EP	1007290
JP	10236557	NONE					
JP	10337680	NONE					
GB	669893	NONE					

END OF ANNEX

(12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

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(71) Applicant *(for all designated States except US)*: **MI-OK PTY LTD** [AU/AU]; 19C/148 Old Pittwater Road, Brookvale, New South Wales 2100 (AU).

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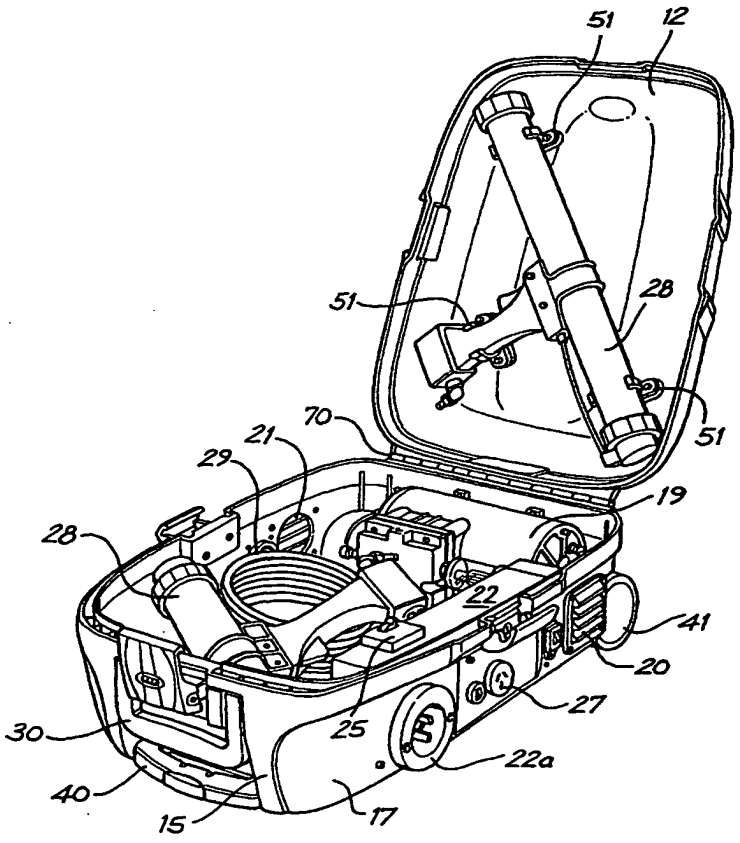
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[Continued on next page]

(54) Title: PORTABLE TOOL BOX

(57) Abstract: A portable tool box (10) for an air-powered tool (28) includes a container (11) having a lid (12) and an air vent (20). Within the container (11) there is an electrically operated air compressor (19), a pneumatic hose (29) and the tool (28).



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patent (AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG).

For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

Published:

— *With international search report.*

PORTABLE TOOL BOX

TECHNICAL FIELD

This invention relates to portable tool boxes and more particularly to a portable tool box for a compressed air tool dispensing gun such as an adhesive gun, nail gun, mixer gun, sausage gun, ratio-pack gun and the like.

For the sake of convenience, the invention will be described in relation to a portable air-powered adhesive gun but it is to be understood that the invention extends to both other forms of dispensing gun as well as other air powered tools.

BACKGROUND ART

Adhesive guns may be either air-powered or manually actuated. Air-powered adhesive guns generally require an air compressor and an air reservoir for operation and hitherto those compressors have been very heavy, very bulky and generally difficult to move about a work site. It is these disadvantages of air-powered adhesive guns that leads to the use of manually actuated adhesive dispensing guns on building sites in circumstances where an air-powered adhesive gun would lead to greater productivity and less worker fatigue and worker injuries.

It is, therefore, an object of this invention to provide a portable air-powered tool which overcomes some, if not all, of the disadvantages associated with currently available air compressor arrangements.

SUMMARY DISCLOSURE OF INVENTION

According to one aspect of the invention there is provided a portable tool box comprising a container having a lid, within which container is mounted an electrically operated air compressor. The container has walls, and a vent mounted in one of the walls.

In one preferred embodiment of the invention, the compressor is electrically connected to a connection box which is electrically accessible from an exterior of the container.

In further embodiments of the invention, the container further comprises one or more general purpose electrical outlets which are electrically connected to the connection box.

In preferred embodiments, the tool box further contains a pneumatic hose and a tool which connects to the compressor with the hose.

In some embodiments, the container has formed therein an opening through which a hose may pass while the hose is connected to the compressor.

In particularly preferred embodiments, the compressor is adapted to operate a dispensing gun without the need for an air reservoir or accumulator.

In some embodiments, the compressor is a medical grade - free compressor.

The invention also provides a method of dispensing comprising the steps of:-

(i) operating a continuously operating air compressor within a portable tool box, and

(ii) dispensing a substance from a gun, the gun powered by air delivered by the compressor through a hose which extends between the compressor and the gun when the portable tool box is closed.

In preferred methods of the invention, the continuously operating air compressor does not require an air reservoir or accumulator.

According to other aspects of the invention there is provided a portable air-powered tool comprising a container having an opening and closed by a lid,

an electrically driven air compressor mount d within the container, at least one air vent in the walls of the container to permit air flow from the exterior to the interior of the container, electrical circuitry means within the container electrically connected to the air compressor and adapted to be connected to a power supply, said container being adapted to house an air-powered gun and an air line for connecting the gun to the air compressor.

In one form of the invention, the electrical circuitry is connected to a general purpose power outlet adapted to receive an electrical lead for electrical devices such as lights, vacuum cleaners and power tools. The electrical circuitry may include a switch which enables the compressor to be switched off with the other device remaining on.

The electrical circuitry may be connected to a battery pack within or external of the container or may be adapted for connection to a main supply.

In a preferred form of the invention there is provided locking means for locking the lid to the container. The container may be provided with wheels, multiple handles and/or a pull-out handle.

BRIEF DESCRIPTION OF THE DRAWINGS

In order that the invention may be more readily understood and put into practical effect, reference will now be made to the accompanying drawings in which:-

Fig. 1 is a perspective view of a potable tool box according to the teachings of the present invention;

Fig. 2 is a side elevation of the device depicted in Fig. 1;

Fig. 3 is another side elevation of the device depicted in Fig. 1;

Fig. 4 is an end elevation of the device depicted in Figs. 1 to 3;

Fig. 5 is another end view of the device depicted in Figs. 1 to 4;

Fig. 6 is an isometric perspective of the device of the present

invention with the lid open;

Fig. 7 is a front view of the device being carried;

Fig. 8 is a side view of the device being pulled on its wheels, and

Fig. 9 depicts in perspective view a person utilising the device of the present invention with the case closed.

BEST MODE FOR CARRYING OUT THE INVENTION

The tool box 10 shown in the drawings includes a container 11 having a lid 12 and locking means 13. The container 11 has a base 14 with optional skids 14a, end walls 15 and 16 and side wall 17 and 18. An electrically operated air compressor 19 is mounted within the container 11 on or near the base 14. Air vents 20 and 21 are provided in the end walls 15 and 16. The container is preferably formed from high impact polymer in a clamshell design with a hinge 70 along a bottom edge.

An electrical circuit within the container 11 includes a connection box 22 adapted to be connected from a fixture 22a to a main supply by an extension lead. A line leads from the box 22 to the electrical terminals of the compressor 19 through an on/off switch 25. Line 26 connects one or more general purpose outlets 27 to the connection box 22. The purpose of the switch 25 is to enable power to be supplied to the general purpose outlets 27 when the compressor 19 is turned off. For example, a light could be connected to one of the general purpose outlets 27 and it can be therefore used without having to run the compressor at the same time. The circuitry may also incorporate a miniature circuit breaker and a residual current device.

An adhesive gun 28 is positioned within the container 11 for example with clips 51 along with an air hose line 29 which is used to couple the gun 28 to the compressor 19.

Preferably, the compressor 19 is a light weight compressor having a long term continuous operating capacity which enables the use of a much smaller and lighter compressor than currently used compressors which may have a substantial accumulator vessel that is charged by the intermittent running of the compressor. Preferably, the compressor is a medical grade oil-free compressor. The compressor may be moderated by a blow-off valve with silencer which maintains an optimum pressure level and prevents pressure back-up during re-starts and motor overload. It is anticipated that the complete portable operated tool of the invention would weigh in the vicinity of 5kg as opposed to 25 to 30kg or much more for current equipment.

In this instance, the container 11 has a handle 30 but various combination of handles could be provided on the lid 12, the side walls and the end walls 15 and 16 of the container 11. A pull-out handle 40 could also be used in which case the container 11 would be fitted with wheels 41 as shown in Fig. 8.

As shown in Figs. 8 and 9 an opening 50 is provided in a wall to allow the hose 19 to exit the container when the hose is connected to the compressor 19.

Various other modifications may be made in details of design and construction without departing from the scope and ambit of the invention. For example, the compressor 19 could be coupled to one or more air vents by a housing to ensure that items placed in the container 11 do not block the flow of air to the compressor 19. Releasable fastener means may be provided to secure the adhesive gun 28 and the hose line 29.

CLAIMS

1. A portable tool box comprising:-
a container having a lid, within which container is mounted an electrically operated air compressor;
the container having walls, a vent mounted in one of the walls.

2. The tool box of claim 1, wherein:
the compressor is electrically connected to a connection box which is electrically accessible from an exterior of the container.

3. The tool box of either of claims 1 or 2, wherein:
the container further comprises one or more general purpose electrical outlets which are electrically connected to the connection box.

4. The tool box of any one of claims 1 to 3, wherein:
the container further comprises one or more internally mounted clips for retaining tools which may be provided by the compressor.

5. The tool box of any one of claims 1 to 4, wherein:
the tool box further contains a pneumatic hose and a tool which connects to the compressor with the hose.

6. The tool box of any one of claims 1 to 5, wherein:
the container has formed therein an opening through which a hose may pass while the hose is connected to the compressor.

7. The tool box of any one of claims 1 to 6, wherein:
the container further comprises an extensible handle and wheels for facilitating transport of the container.

8. The tool box of any one of claims 1 to 7, wherein:
the compressor is adapted to operate a dispending gun without the need for an air reservoir or accumulator.

9. The tool box of any one of claims 1 to 8, wherein:
the compressor is a medical grade oil-free compressor.

10. The tool box of any one of claims 1 to 9, wherein:
the container is moulded from a high impact polymer in a clamshell design.

11. The tool box of any one of claims 1 to 10, wherein:
the compressor further comprises a pressure relief valve.

12. The tool box of any one of claims 1 to 11, wherein:
an electrical circuit to which the connection box is electrically connected further comprises a residual current device.

13. The tool box of any one of claims 1 to 12, wherein:
an electrical circuit to which the connection box is electrically connected further comprises a miniature circuit breaker.

14. The portable tool box of any one of claims 1 to 13, wherein:

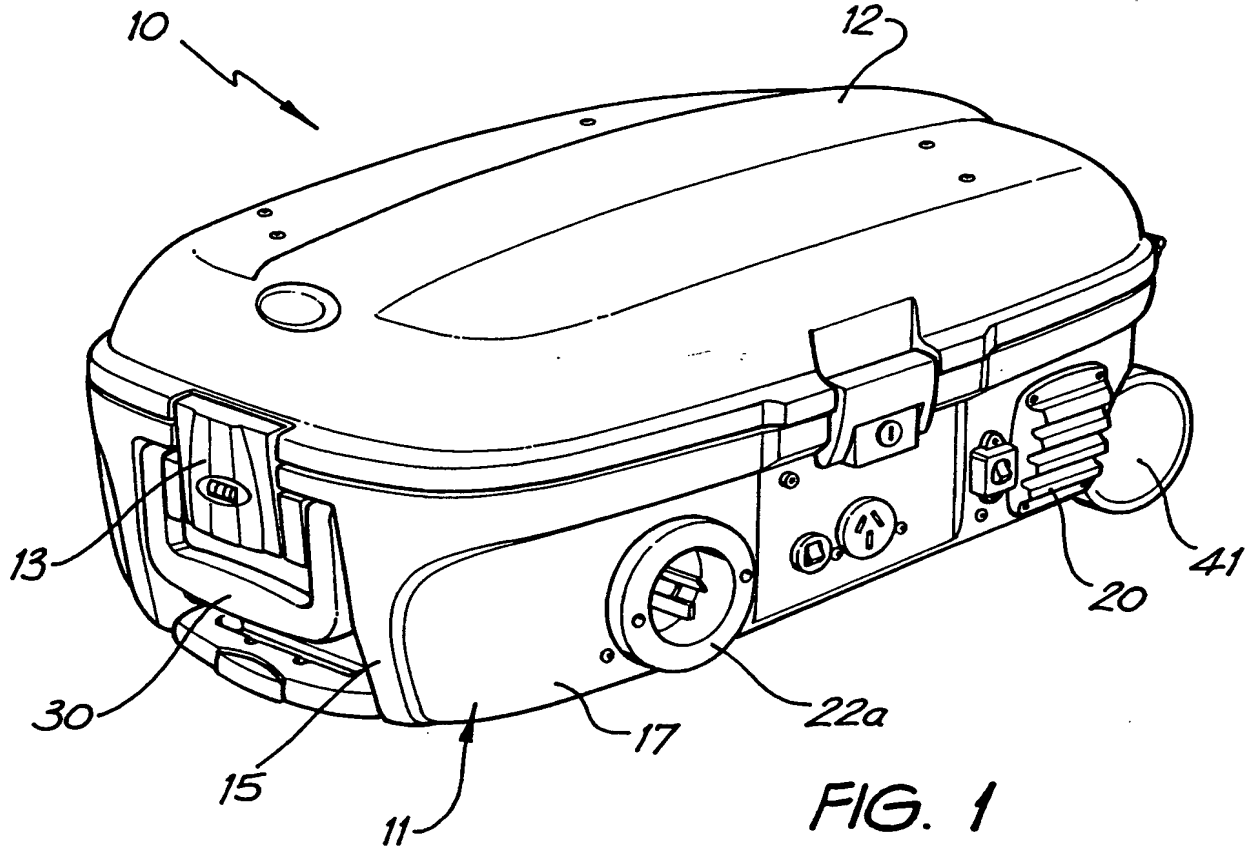


FIG. 1

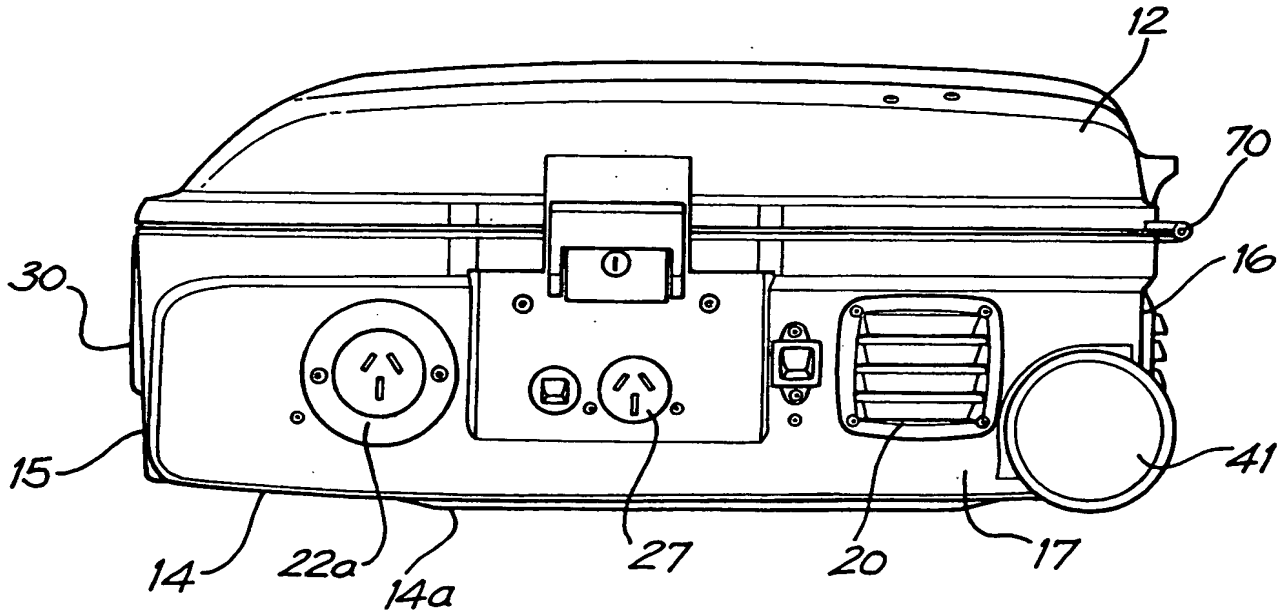


FIG. 2

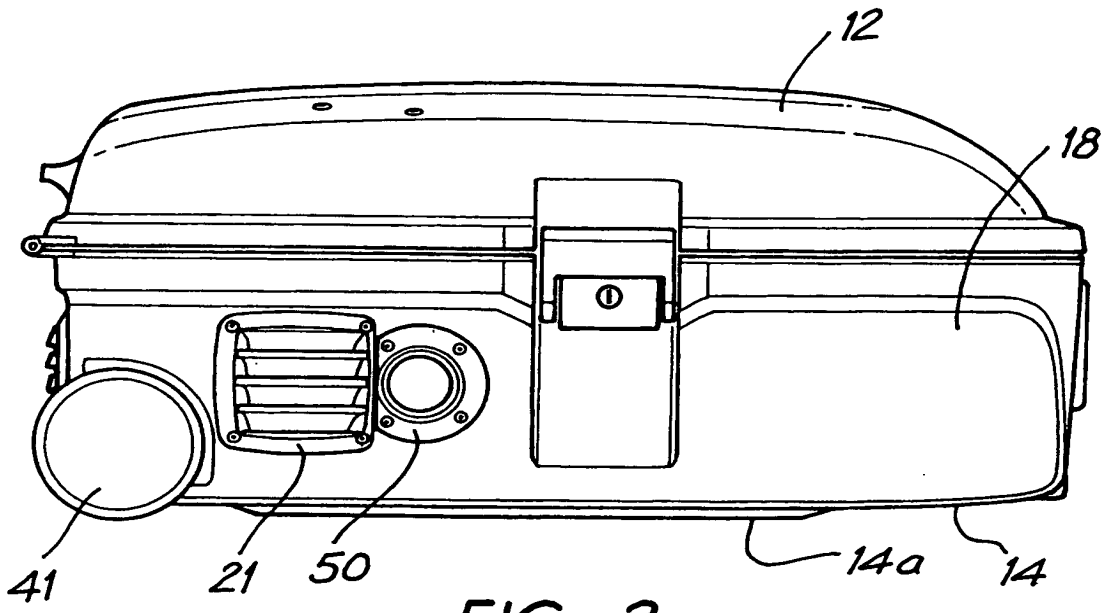


FIG. 3

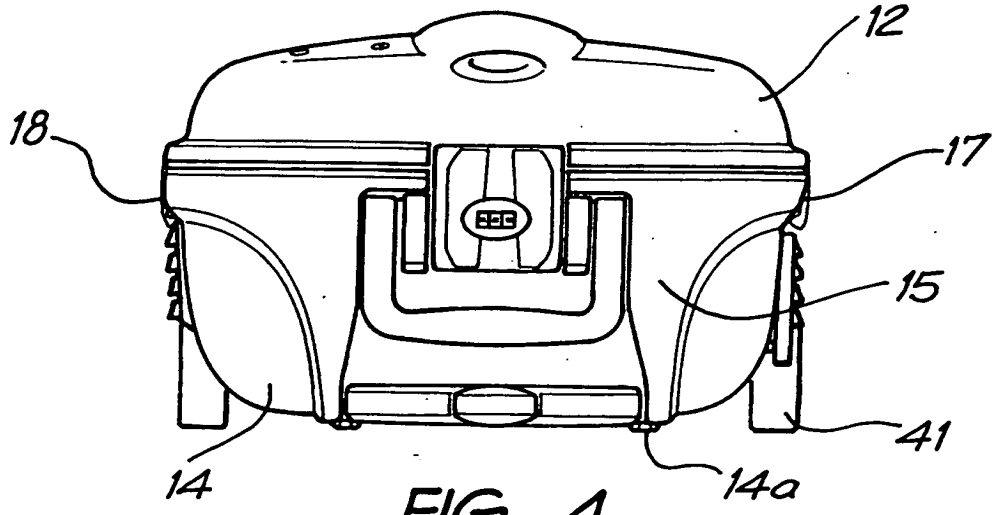


FIG. 4

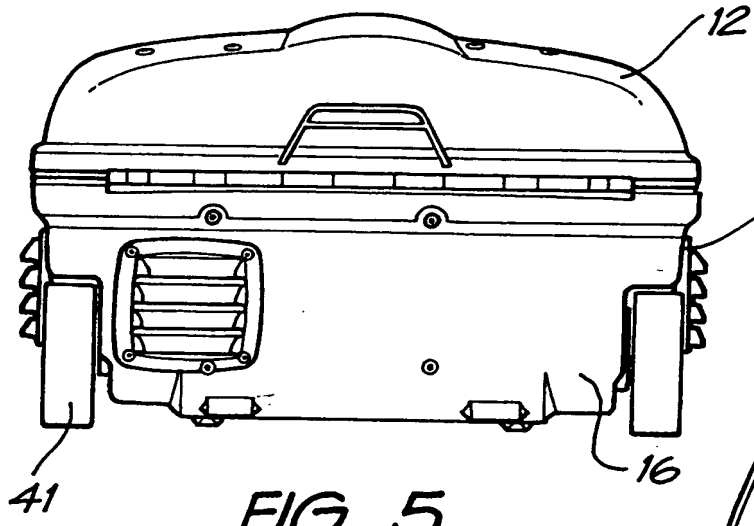


FIG. 5

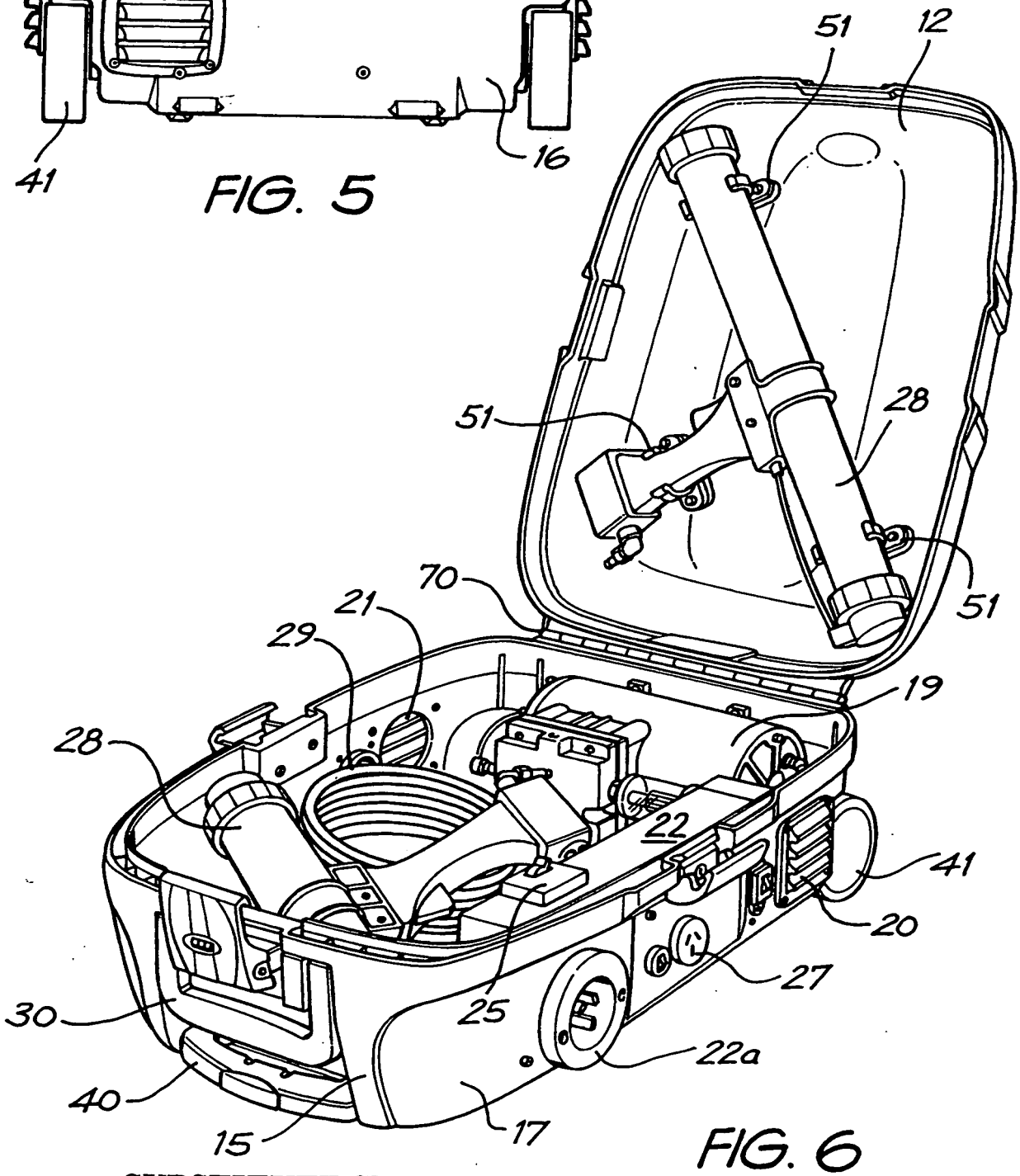


FIG. 6

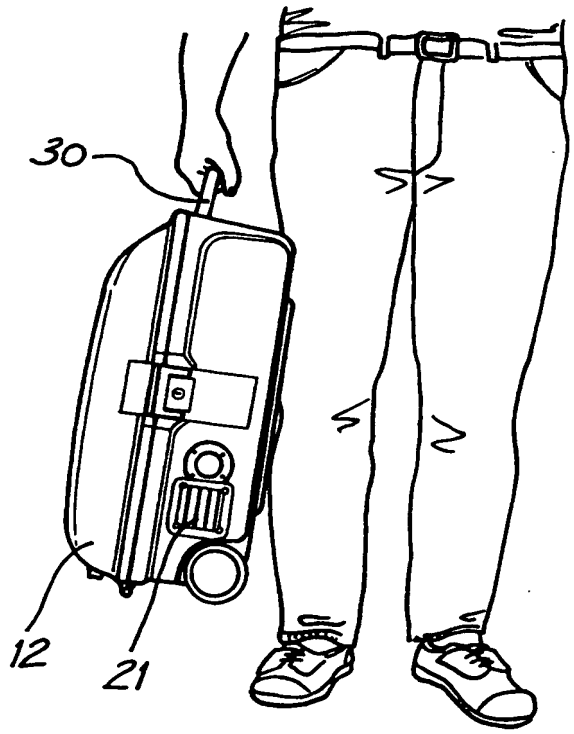


FIG. 7

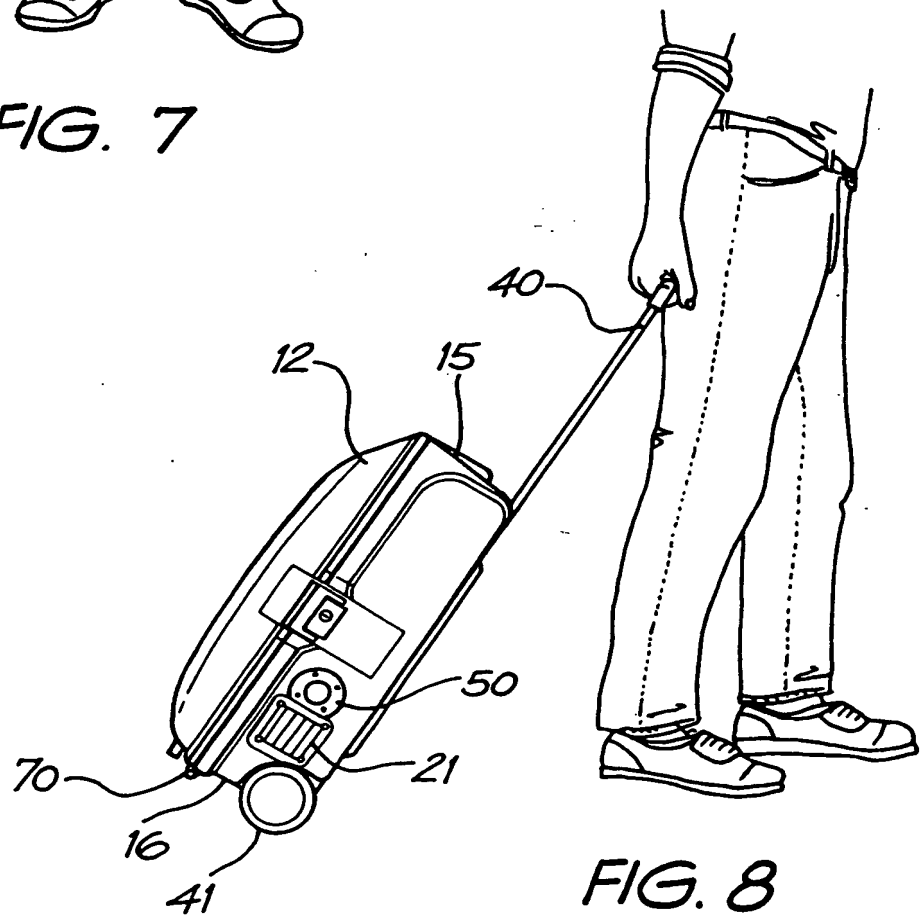


FIG. 8

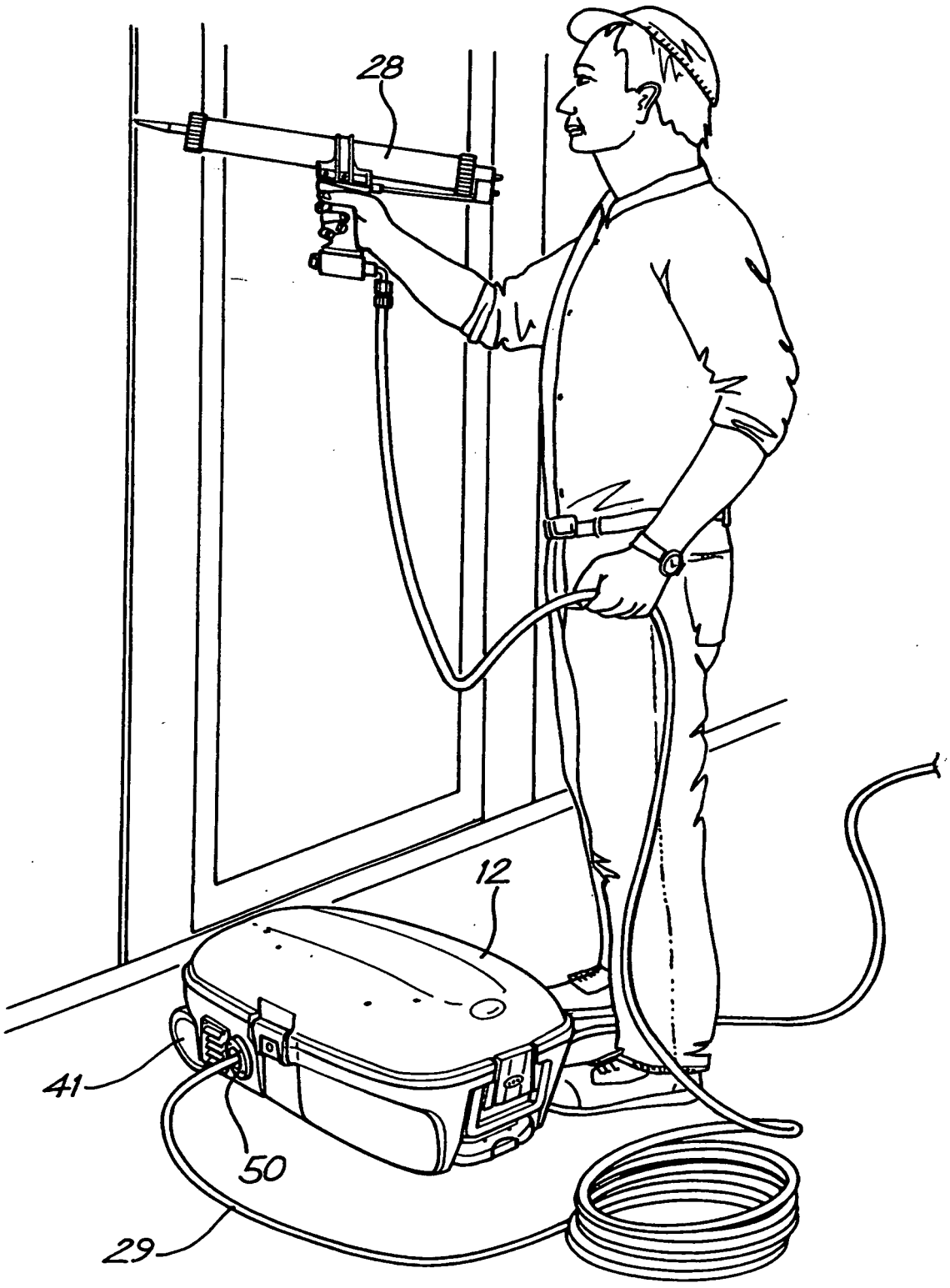


FIG. 9

INTERNATIONAL SEARCH REPORT

International application No.
PCT/AU 00/01219

A. CLASSIFICATION OF SUBJECT MATTER

Int Cl[7]: B05C 17/005 B25H 3/02 B25F 5/02 F16M 3/00

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)
IPC: B05C 17/005 B25H 3/02 B25F 5/02 F16M 3/00

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched
AU: IPC as above

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	GB 2330521 A (SPOONER) 28 April 1999 Whole document	1-19
A	WO 99/10134 A (MÜLLER) 4 March 1999 Whole document	1-19
A	Patent abstract of Japan, JP 10236557 A (YOSHINO) 8 September 1998 Abstract	1-19

[X] Further documents are listed in the continuation of Box C

[X] See patent family annex

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"O" document referring to an oral disclosure, use, exhibition or other means

"P" document published prior to the international filing date but later than the priority date claimed

"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention

"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone

"Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art

"&" document member of the same patent family

Date of the actual completion of the international search	Date of mailing of the international search report
25 October 2000	-6 NOV 2000
Name and mailing address of the ISA/AU AUSTRALIAN PATENT OFFICE PO BOX 200 WODEN ACT 2606 AUSTRALIA E-mail address: pct@ipaustralia.gov.au Facsimile No.: (02) 6285 3929	Authorized officer SARAVANAMUTHU PONNAMPALAM Telephone No.: (02) 6283 2070

INTERNATIONAL SEARCH REPORT

International application No.
PCT/AU 00/01219

C (Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	Patent Abstracts of Japan JP 10337680 A (GONKEN) 22 December 1998 Abstract	1-19
A	GB 669893 A (THE BRITISH THOMSON-HOUSTON COMPANY LIMITED) 9 April 1952 Whole document	1-19

INTERNATIONAL SEARCH REPORT
Information on patent family members

International application No.
PCT/AU 00/01219

This Annex lists the known "A" publication level patent family members relating to the patent documents cited in the above-mentioned international search report. The Australian Patent Office is in no way liable for these particulars which are merely given for the purpose of information.

Patent Document Cited in Search Report		Patent Family Member					
GB	2330521	NONE					
WO	9910134	AU	9340698	BG	104224	EP	1007290
JP	10236557	NONE					
JP	10337680	NONE					
GB	669893	NONE					

END OF ANNEX